

IN THE CLAIMS:

1. (Previously Presented) A simulation system for simulating an operation of an automotive vehicle comprising:

an input providing vehicle information and path information; and

a controller coupled to the input, said controller having a vehicle computer model therein, said controller programmed to,

determine an initial non-zero steering wheel angle input to the computer model;

determine a first steering wheel angle input to the computer model at a time later than the initial steering wheel angle input by comparing a look ahead point and an intended path;

when the vehicle model is understeering, operate the computer model with the initial steering wheel angle input until an error of the first steering wheel angle and the initial steering wheel angle is decreasing, wherein said controller determines when the vehicle model is understeering in response to a yaw acceleration greater than a threshold and an increasing steering wheel angle;

when the error decreases, operate the computer model with the first steering wheel angle input; and

generate an output in response to the vehicle model and the initial steering wheel input or the first steering wheel input.

2. (Original) A system as recited in claim 1 wherein the controller controls an output device in response to the vehicle model and the initial steering wheel input or the first steering wheel input.

3. (Original) A system as recited in claim 1 wherein the computer model comprises a dynamic control model.

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) A system as recited in claim 1 wherein said controller determines an increasing steering wheel angle by comparing the initial steering wheel angle input to the first steering wheel angle input.

8. (Original) A system as recited in claim 1 wherein said controller determines the error in response to a decreasing steering wheel angle.

9. (Previously Presented) A system as recited in claim 1 wherein said controller determines the error in response to a decreasing steering wheel angle and the initial steering wheel angle and the first steering wheel angle input.

10. (Previously Presented) A system as recited in claim 1 wherein said controller determines the error in response to a decreasing steering wheel angle and a difference of the initial steering wheel angle and the first steering wheel angle input.

11. (Previously Presented) A system as recited in claim 1 wherein said controller determines the error in response to a decreasing steering wheel angle and a difference of the initial steering wheel angle and the first steering wheel angle input compared to a threshold.

12. (Previously Presented) A method of operating a vehicle computer model having vehicle information and path information therein, the method operating on a digital computer system and comprising:

determining an initial non-zero steering wheel angle input to the compute model;

determining a first steering wheel angle input to the computer model at a time later than the initial steering wheel angle input by comparing a look ahead point and an intended path;

determining when the vehicle model is understeering in response to a yaw acceleration greater than a threshold and an increasing steering wheel angle;

when the vehicle model is understeering, operating the computer model with the initial steering wheel angle input until an error of the first steering wheel angle and the initial is decreasing;

when the error decreases, operating the computer model with the first steering wheel angle input; and

outputting results of the operating step.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Currently Amended) A method as recited in claim ~~45~~ 12 wherein an increasing steering wheel angle is determined by comparing the initial steering wheel angle input to the first steering wheel angle input.

17. (Original) A method as recited in claim 12 further comprising determining the error in response to a decreasing steering wheel angle.

18. (Previously Presented) A method as recited in claim 12 further comprising determining the error in response to a decreasing steering wheel angle and the initial steering wheel angle and the first steering wheel angle input.

19. (Previously Presented) A method as recited in claim 12 further comprising determining the error in response to a decreasing steering wheel angle and a difference of the initial steering wheel angle and the first steering wheel angle input.

20. (Previously Presented) A method as recited in claim 12 further comprising determining the error in response to a decreasing steering wheel angle and a difference of the initial steering wheel angle and the first steering wheel angle input compared to a threshold.

21. (Previously Presented) A method of operating a vehicle computer model having vehicle information and path information therein, the method operating on a digital computer system and comprising:

determining a plurality of non-zero steering wheel angle inputs, each associated with a different time stamp, to the computer model by comparing a look ahead point and an intended path at various times;

determining when the vehicle model is understeering in response to a yaw acceleration greater than a threshold;

when the vehicle model is understeering, holding the steering wheel angle to a first one of the plurality of steering wheel angle inputs until an error determined as a function of the plurality of steering wheel angle inputs is decreasing;

when the error decreases, operating the computer model with the one of the plurality of steering wheel angle inputs subsequent to the first steering wheel angle input; and

outputting results of the operating step.

22. (Previously Presented) A method as recited in claim 21 wherein determining a plurality of steering wheel angle inputs comprises periodically determining the plurality of steering wheel angle inputs.

23. (Original) A method as recited in claim 21 wherein the yaw acceleration comprises a normalized yaw acceleration.

24. (Previously Presented) A method as recited in claim 23 wherein the normalized yaw acceleration comprises a steering wheel angle normalized yaw acceleration.

25. (Previously Presented) A method as recited in claim 21 wherein operating the computer model with the one of the plurality of steering wheel angle inputs subsequent to the first steering wheel angle input comprises operating the computer model with the one of the plurality of steering wheel angle inputs subsequent to the first steering wheel angle input that corresponds in time to a decreased error.

26. (Original) A method as recited in claim 21 further comprising determining the error in response to a decreasing steering wheel angle.

27. (Original) A method as recited in claim 21 further comprising determining the error in response to a decreasing steering wheel angle and the previous steering wheel angle and the first steering wheel angle input.

28. (Original) A method as recited in claim 21 further comprising determining the error in response to a decreasing steering wheel angle and a difference of the previous steering wheel angle and the first steering wheel angle input.

29. (Original) A method as recited in claim 21 further comprising determining the error in response to a decreasing steering wheel angle and a difference of the previous steering wheel angle and the first steering wheel angle input compared to a threshold.